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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,605

03/26/2007

Alan Mole

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EXAMINER

MATHEW, HEMANT MATHAI

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

05/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,605	Applicant(s) MOLE, ALAN	
	Examiner HEMANT MATHEW	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 15-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/05/2006; 03/26/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 28. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: the content of the specification should be written as shown below.

Appropriate correction is required.

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

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- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the

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- invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
 - (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
 - (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
 - (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
 - (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 22 recites the limitation "the means for catalysing the breakdown of the ozone" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Claim 23 is dependent on claim 22 and is likewise indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 15-18, 22, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Eldredge (WO 01/78793 A1).
8. Regarding claim 15 and 27, Eldredge discloses a produce decontamination apparatus or sterilization apparatus (abstract line 1) comprising a chamber or sterilizing generator (100) for accepting produce to be decontaminated and/or sterilised, and means for producing a free radical saturated atmosphere within the chamber so that, in use, the free radical saturated atmosphere decontaminates and/or sterilises the produce (abstract lines 1-5).

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9. Regarding claim 16 and 17, Eldredge discloses that the means for producing a free radical saturated atmosphere comprises one or more first atomising sprayheads (222), a supply of ozonised liquid which is supplied to the first sprayheads (pg. 28 lines 1-5), and ultraviolet (UV) light emitting device (810) acts as a means for breaking down the ozone forming part of the ozonised liquid once discharged from the first sprayheads (pg. 21 lines 15-19).

10. Regarding claim 18, Eldredge discloses that the means for producing a free radical saturated atmosphere further comprises means for catalysing the breakdown of hydrogen peroxide formed from the ozone of the ozonised liquid once discharged.

11. Regarding claim 22, Eldredge discloses the use of coatings as a means for catalysing the breakdown of the ozone includes a coating on the interior surface of the chamber, the coatings having one or more ozone catalyzing materials (pg. 17 lines 22-24 - pg. 18 lines 1-4).

12. Regarding claim 26, Eldredge discloses that the chamber is open to atmospheric pressure since the oxygen concentrator (108) is a part of the chamber (100) and extracts oxygen from the air (pg. 15 lines 20-21).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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14. Claims 19, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldredge in view of SpringerLink-Journal Article.

15. Eldredge discloses one or more second atomising sprayheads (222, as schematically shown in Fig. 7) where one is a first atomising sprayhead and another one is a second atomising sprayhead. Eldredge does not disclose a catalysing liquid which includes ferric ions that is supplied to the second sprayhead, in which the catalysing liquid catalyses the breakdown of the hydrogen peroxide formed from the ozone of the ozonised liquid once discharged from the second sprayhead.

SpringerLink-Journal Article discloses “hydrogen peroxide decomposition in acidic solutions is catalyzed by the free ferric ion, Fe^{3+} ”. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge, with a acidic solution which includes ferric ions as a catalysing liquid to catalyse the breakdown of the hydrogen peroxide formed from the ozone of the ozonised liquid once discharged from the second sprayhead in order to aid the ultraviolet light emitting device to breakdown remaining hydrogen peroxide and ozone.

16. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldredge in view of CSA Illumina.

17. Eldredge does not disclose that one of the ozone catalysing materials is one of titanium oxide, titanium dioxide, or manganese oxide. CSA Illumina discloses that “manganese dioxide based catalysts provide the high ozone destruction...” Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was

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made to modify the apparatus as taught by Eldredge, with a manganese dioxide or manganese (VI) oxide coating as an ozone catalysing material.

18. discloses a the use of coatings as a means for catalysing the breakdown of the ozone includes a coating on the interior surface of the chamber, the coatings having one or more ozone catalyzing materials (pg. 17 lines 22-24 - pg. 18 lines 1-4).

19. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldredge in view of Kamm (6,725,674).

20. Eldredge discloses the use of a conveyor system (pg. 28 lines 1-7). However, Eldredge does not disclose that the chamber houses two vertically spaced conveyors in which the vertical spacing between the conveyor belts is adjustable. Kamm discloses two conveyors (4 and 5) in which material is moved up a tower by a first conveyor (4) and then later moved down the second tower by a second conveyor (5). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge, with the two conveyors and towers that move material up and down the towers since the conveyors move to their required locations along the tower, the vertical spacing between the conveyor belts is adjustable in order to allow for produce to be thoroughly affected by the ozonised liquid.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Notice of References Cited for pertinent prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEMANT MATHEW whose telephone number is (571)

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270-5604. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEMANT MATHEW/
Examiner, Art Unit 3742

/TU B HOANG/
Supervisory Patent Examiner, Art Unit 3742